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A REVIEW OF NEARCTIC SPECIES OF *ACMOPOLYNEMA* OGLOBIN (HYMENOPTERA: MYMARIDAE)[1]

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Abstract.—Four new species of *Acmopolynema* (Hymenoptera: Mymaridae) from North America are described and illustrated, *A.* **sema**, *A.* **miamiense**, *A.* **uma**, and *A.* **immaculatum**. Lectotypes are designated for *A. varium* (Girault) n. status, and *A. bifasciatipenne* (Girault); *A. vittatipenne* (Dozier) is a new combination. A key to the seven Nearctic species is presented.

When the genus *Acmopolynema* was described (Oglobin, 1946), its author noted that he possessed several undescribed species from South America and speculated that the genus originated in the Neotropics, although the type-species (*A. bifasciatipenne* (Girault)) was from North America. Since that time, several species have been described; one from Japan (Taguchi, 1971), two from Africa (Mathot, 1968; Risbec, 1957), one from the Philippines (Soyka, 1956), and two from South America (Gomes, 1948; Soyka, 1956), and several undescribed species have been collected from the Neotropics (C. Yoshimoto, personal communication).

Recently, I examined material from several sources in North America, and have found new combinations, specimens which represent new species, and species for which holotypes had not been designated. In this paper, I have attempted to remedy these problems and give a review of the species from the Nearctic Region.

The biology of species of *Acmopolynema* remains largely unknown. *Acmopolynema varium* (Girault) has been reared from the eggs of *Oecanthus niveus* (DeGeer), *O. nigricornis nigricornis* Walker, and *O. nigricornis quadripunctatus* Beutenmuller (Gryllidae) and *A. bifasciatipenne* has been reared from *Anaxipha exigua* (Say) (Gryllidae). In addition, Gomes (1948) reported *Sphenorhina liturata* (Lepeletier and Serville) (Cercopidae) as the

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host of *A. hervali* Gomes, and *A. sema*, n.sp., was reared from *Homalodisca insoleta* (Walker) (Cicadellidae).

Terminology used for morphological features is that of DeBauche (1948) and Eady (1968). All ratios were measured at 100× with a dissecting microscope and eyepiece reticle. Funicle segments, coxae, wings, etc. were measured at their widest point, scape length includes radicula, and the thorax was measured dorsally along the midline. Measurements of ovipositor length refer only to that part that extends past the tip of the abdomen. The abbreviation LMC refers to the longest marginal cilia of the forewing. Although species of *Acmopolynema* are large for mymarids, some characters cannot be seen without the aid of a compound microscope; in particular, the sensory structures of the antennae and wing setae. Characters which cannot be reliably evaluated with a dissecting microscope have been set off by parentheses in the species key.

Generic Diagnosis and Discussion

Annecke and Doutt (1961) place *Acmopolynema* in the subfamily Mymarinae (abdomen convexly rounded at base; phragma barely or not projecting into the abdomen), tribe Mymarini (four tarsal segments and petiolate abdomen). In their key to genera, they distinguish the genus on the basis of the following combination of characters: Antenna 9-segmented, club simple; propodeum with two keels converging above the petiolar insertion (Figs. 1, 2) to form a more or less distinct process; discal setae of forewing often with enlarged bases (tormae); and forewings often banded. Oglobin (1946), in his original description of the genus included the following: Scape transversly striate; pronotum completely divided medially, with spiracles at posterolateral angles; scutellum with a transverse row of small foveae; and male antenna 13-segmented. In addition, the median, frontal, and supraorbital carinae are complete; the frontal groove present, and the ocelli are in a curved line, with the median ocellus slightly forward of the laterals (Fig. 3).

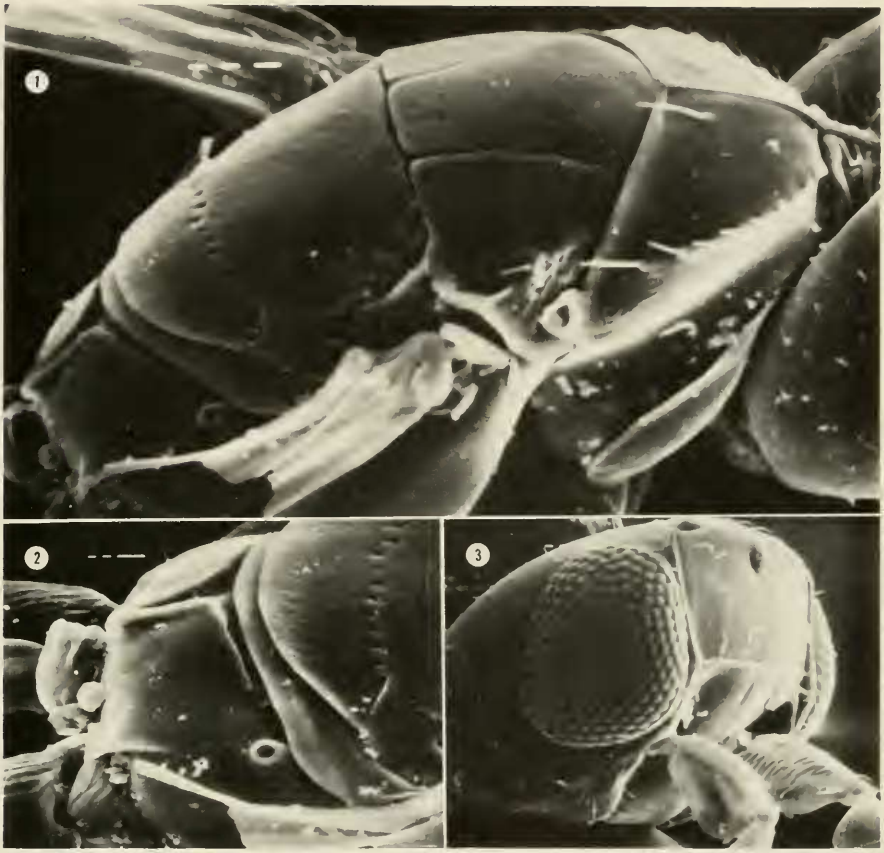
Most species of this genus are readily recognizable, being quite large for mymarids (over 1 mm) and having prominently banded forewings. Oglobin (1946) stated that members of the genus have the propodeal keels forming a stout tooth directed caudally, and the combined length of the hindtarsi shorter than their tibia. However, it is now known that some of the species have neither character. *Acmopolynema miamiense*, n.sp., and *A. vittatipenne* (Dozier) have their hindtarsi longer than the tibia, and in *A. immaculatum*, n.sp., and *A. miamiense*, n.sp., the tooth formed by the propodeal keels is indistinct or not visible at all (the tooth can be seen in the male of *immaculatum*). Dr. C. Yoshimoto (personal communication) has noted that in some Neotropical species the pronotum is undivided and the posterior margin of the scutellum may extend over the anterior part of the propodeum. The form of the propodeal keels may vary from a simple V-shape as in *A.*

immaculatum, to a "V" with transverse anterior carinae attached (Fig. 2) as in *A. sema*, n.sp., or a "V" formed of several smaller carinae, such as seen in some specimens of *A. varium*. Finally, many of the species exhibit an external enlargement of the opening of the prothoracic spiracle (Fig. 1) which may be directed outward or posteriorly.

The discal setae of the forewing (Fig. 4) vary in structure and placement among the various species. However, the interpretation of their structure under the compound microscope can be difficult. The modified discal setae (types A–E) are representative of the large setae covering the dorsal surface of the proximal large stained area of the wing. Setal types F–H are found spread throughout the surface of the wing, especially in the distal stained area, the hyaline areas, and the wing margins. They are often found both dorsally and ventrally. It should be emphasized that the relative lengths of the setae and placement of barbs, swellings, etc. are quite variable, and the illustrations are presented as a guide to help in identifying the various types.

Key to Females of Nearctic *Acmopolynema*

1. Forewing hyaline (Fig. 13), discal setae evenly scattered over surface ..... *immaculatum*, new species
1′. Forewing with 2 or 3 stained areas (Figs. 12, 14–18), setae not evenly scattered over surface 2
2. Longest marginal cilia of forewing less than ½ wing width; (funicles 5 and 6 each with a pair of sensory ridges; Figs. 10–11) 3
2′. Longest marginal cilia of forewing equaling at least ½ wing width; (funicles 5 and 6 without sensory ridges) 4
3. Funicles 2 and 3 15× as long as wide (Fig. 10); scutum equal in length to scutellum (modified discal setae of type D (Fig. 4), spread over both large stained areas) ..... *miamiense*, new species
3′. Funicles 2 and 3 about 10× as long as wide (Fig. 11), scutum longer than scutellum; (modified discal setae of type E (Fig. 4), restricted to basal large stained area) ..... *varium* (Girault)
4. Hindcoxa reticulate; apical stained area of forewing reaching wing tip (Fig. 17) ..... *uma*, new species
4′. Hindcoxa alutaceous or smooth; apical stained area of forewing not reaching wing tip 5
5. Ovipositor exerted a distance equal to length of abdomen; pronotum less than ½ length of the scutum ..... *vittatipenne* (Dozier)
5′. Ovipositor exerted less than length of abdomen, pronotum more than ½ length of scutum 6
6. Hindtarsus longer than tibia; scutum longer than scutellum, body length about 2.0 mm ..... *bifasciatipenne* (Girault)
6′. Hindtarsus shorter than tibia; scutum equal to or less than scutellum; body length about 1.2 mm ..... *sema*, new species



Figs. 1–3. *Acmopolynema sema*, habitus view. 1, Lateral view of thorax. 2, Closeup of propodeum. 3, Head.

Acmopolynema sema Schauff, New Species
Figs. 1–3, 5, 16

Holotype female.—Length 1.2 mm. Color dark brown; face, hindcoxa, and median abdomen lighter, the following yellow: Scape, pedicel, 1st funicle segment, foreleg except proximal ½ of femur and last tarsal segment, midcoxa, proximal tip of tibia and first 3 tarsi, apical tip of hindfemur, proximal tip of tibia and first 3 tarsi, and petiole. Ratio head:thorax:abdomen:ovipositor 16:52:60:10. Head alutaceous, postfrontal carina incomplete, occipital suture nearly reaching foramen, POL:OOL:interocular distance at vertex 10:3:23, eye height:malar distance 15:10, toruli removed 1 diameter from median carina; antennal ratio (Fig. 5) beginning with scape 12:7:8:15:12:7:7:6:21, scape width 0.5× length, fu-

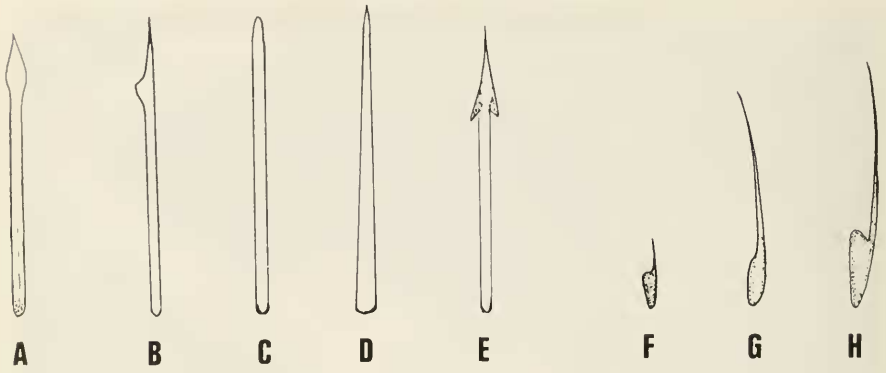


Fig. 4. Modified wing setae types of *Acmopolynema*.

nicles becoming wider apically, club width 0.4× length, with 9 sensory ridges; ratio pronotum:scutum:scutellum:propodeum 10:15:20:7, pronotum faintly alutaceous dorsally, coriaceous posterolaterally, with a pair of stout setae laterad of median carina posteriorly, laterally with a row of 9 setae, spiracle enlarged, directed outward; scutum and scutellum alutaceous, notauli constricted anteriorly (Fig. 1), scutellum with transverse row of fovea across posterior ⅓, a small row of fovea anterolaterally, axillae each with a small seta; propodeum smooth, median keels forming a distinct V, flaring anteriorly and running parallel to metanotum, not reaching spiracle, forming a small tooth posteriorly, lateral carina well developed, not reaching spiracle, with a seta posterolaterally, spiracle slightly raised, with a shallow depression between end of keels and spiracle; ratio femur:tibia:tarsi 1:2:3:4 as follows: Foreleg 35:32:16:9:6:9, midleg 27:45:20:10:8:10, hindleg 35:57:28:10:7:10, hindcoxa length:width 20:8, lightly alutaceous, with few setae laterally and ventrally; forewing as in Fig. 16, length:width:LMC 150:36:20, modified discal setae of type B, restricted to proximal large stained area; hindwings length:width 110:3; abdomen elliptic, ovipositor exerted 0.18× abdomen length.

Allotype male.—Length 1.0 mm. As for female, except for following: 2nd funicle segment yellow, fore- and midlegs entirely yellow except for the last tarsal segment, hindcoxae yellow; antennal ratio beginning with scape 10:7:14:16:14:14:14:14:15:13:11:11:12, funicles all equal in width; forewing length:width:LMC 134:32:21; abdomen ovate, shorter than thorax.

Types.—Holotype ♀, "Georgia, Ft. Valley, IX-1956, G.H. Kaboostian, reared from *Homalodisca insoleta*"; deposited in the USNM, type no. 76793; donated by the Florida State Collection of Arthropods (FSCA), Gainesville, Florida. Allotype ♂, 28 ♀, 8 ♂ paratypes, same data as holotype, deposited in USNM and FSCA.

Other specimens examined.—Florida, Alachua and DeLeon Counties 13 ♀, 2 ♂; Texas, Hidalgo Co. 13 ♀.

Etymology.—The species epithet is an arbitrary combination of letters.

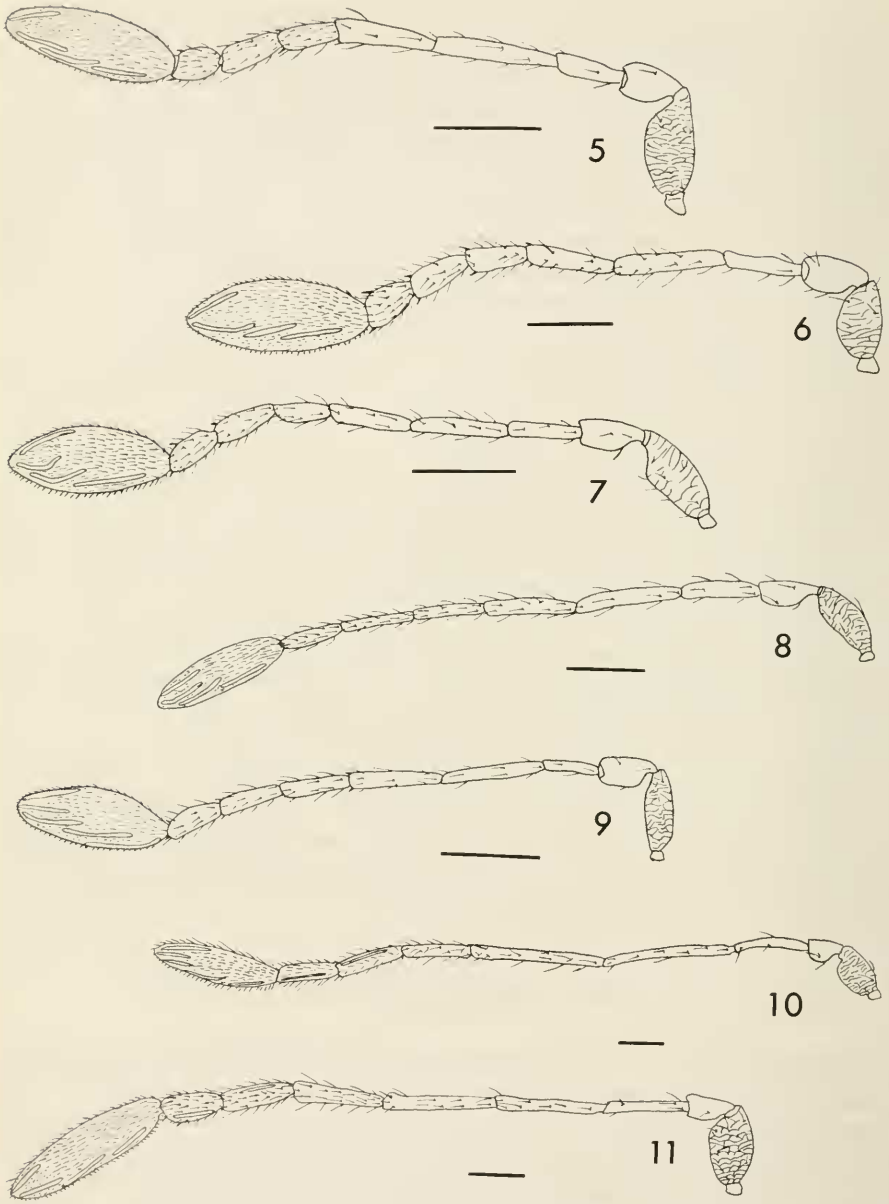
Variation.—Length 1.1–1.3 mm excluding ovipositor. Color generally as for holotype, with the following exceptions: Antennal funicle segments occasionally all yellow to light brown, rarely with scape and pedicel light brown. Median and supraorbital carinae may be partially stained darker than the rest of the head. Forecoxa, femur and tibia ranging from light yellow to light brown, same for midlegs. Hindcoxa may be nearly all yellow. Prothorax occasionally lighter brown or red brown; abdomen may be concolorous dark brown without a lightened area to concolorous red brown.

Antennal segments may vary + or − one unit from those given for the type. Pronotum occasionally with 2 pairs of setae laterad of the median carina; 7–11 setae in row at lateral edge of pronotum. Forewing length:width:LMC 134–150:32–36:19–21. The small stained area under the venation is generally very light on this species and may be reduced to a small fuscous area along the posterior wing margin. The larger stained areas vary somewhat in size and placement, but are generally very similar to the type. The numbers of setae in the stained areas and in the hyaline area also vary slightly in number and length; however, the enlarged setae of the proximal stained area seem to be restricted to that general area of the wing. In lateral view, the female abdomen is generally somewhat elongate, the length being about 3× the width. However, in some specimens the abdomen appears more ovate, the length being only about 2× the width.

Diagnosis and Discussion.—This species may be recognized by the following combination of characters: Propodeal keels flaring anteriorly and running parallel to metanotum, LMC equal to or greater than half the wing width, enlarged discal setae restricted to the proximal large stained area, hindtarsi shorter than tibia, ovipositor slightly exerted, length about 1.2 mm, and overall dark brown in color.

Acmopolynema miamiense Schauff, New Species
Figs. 10, 15

Holotype female.—Length 1.8 mm. Color brown; median and supraorbital carinae, posterior abdomen darker; forecoxa, apical and basal tip of mid- and hindcoxae white; the following yellow: Antenna except club, apical ½ of foretibia and foretarsus, midtarsus, apical ⅓ of 1st hindtarsus, last three tarsi. Ratio head:thorax:abdomen:ovipositor 18:85:85:90. Head alutaceous, postfrontal carina incomplete; occipital suture reaching just past oscellus, POL:OOL:interocular distance at vertex 10:4:25, eye height:malar distance 20:12, toruli removed 1 diameter from median carina; antennal ratio (Fig. 10) beginning with scape 12:8:20:32:32:17:18:14:30, scape width 0.6× length, funicles only slightly wider apically, club width 0.33× length, funicles 5 and



Figs. 5–11. Female *Acmopolynema* antennae (black line equals 0.1 mm). 5, *A. sema*. 6, *A. immaculatum*. 7, *A. uma*. 8, *A. bifasciatipenne*. 9, *A. vittatipenne*. 10, *A. miamiense*. 11, *A. varium*.

6 each with a pair of sensory ridges; club with 12 sensory ridges; ratio pronotum:scutum:scutellum:propodeum 18:27:27:13; pronotum with very faint striations dorsally, alutaceous postero-laterally, pair of small setae laterad of median carinae medially, larger pair near posterior margin, lateral edge with row of 7 setae, spiracle enlarged, directed posteriorly; scutum alutaceous dorsally, coriaceous laterally, notauli a broad straight groove; scutellum alutaceous, with transverse row of fovea across posterior ⅓, axilla each with a large seta; propodeum smooth, median keels forming a distinct V, not forming a tooth posteriorly; flaring anteriorly and running parallel to metanotum, nearly reaching lateral carinae, lateral carinae distinct, nearly reaching spiracle, with a seta laterad in posterior ⅓, spiracle slightly raised. Ratio of femur:tibia:tarsi 1:2:3:4 as follows: Forelegs 50:50:54:12:10:10; midlegs 38:58:65:12:10:10; hindleg 52:82:92:12:10:10; hindcoxa length:width 35:10, alutaceous; forewing as in Fig. 15, length:width:LMC 205:52:14, modified discal setae of type D, present in both large stained areas; hindwing length:width 160:3; abdomen elongate elliptic, ovipositor exerted 1.1× length.

Male.—Unknown.

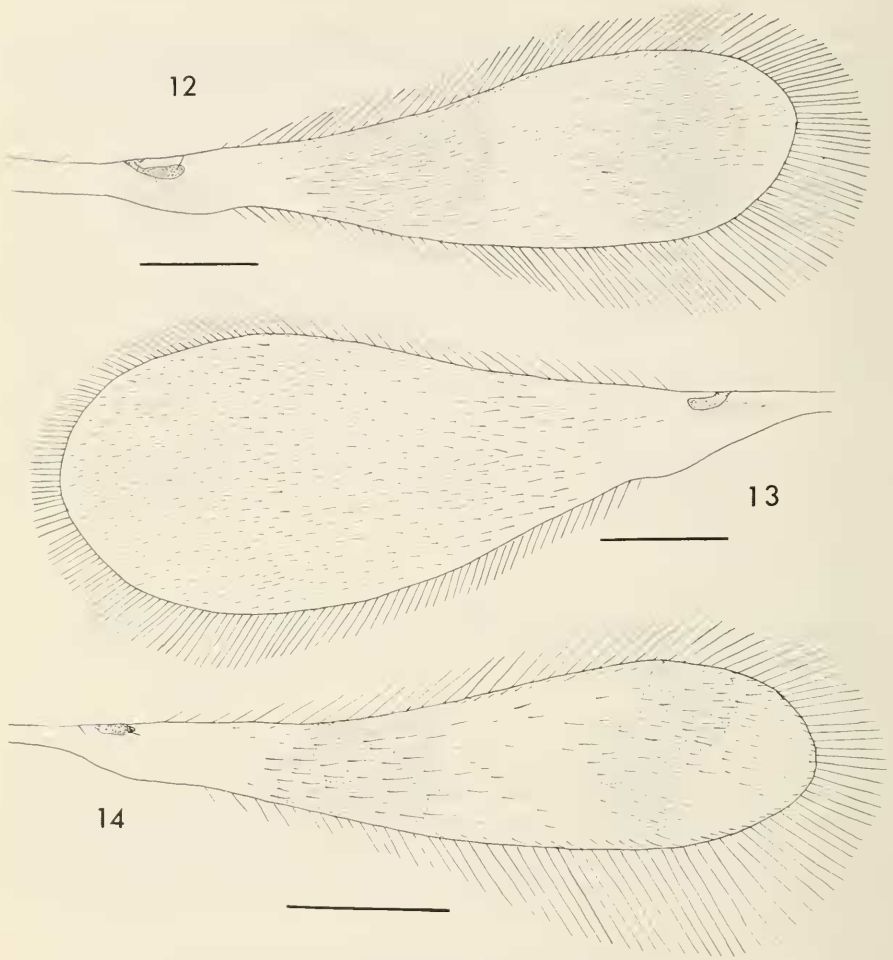
Types.—Holotype ♀ data as follows: "Miami, Fla. Mar. 6, 1963. black light trap coll, A.S. Mills"; deposited in the USNM type no. 76794.

Etymology.—The species epithet *miamiense* refers to the place of collection (Miami, Fla.).

Diagnosis and Discussion.—This is one of the largest of the species studied, and can be recognized by the following combination of characters: Funicles 2 and 3 15× as long as wide, funicles 5 and 6 each with a pair of sensory ridges; hindtarsus longer than tibia; ovipositor extruded a distance equal to the length of the abdomen or more; LMC equal to less than half the wing width. The sensory ridges on funicles 5 and 6 are found only in this species and in *A. varium*.

Acmopolynema uma Schauff, New Species
Figs. 7, 17

Holotype female.—Length 1.2 mm. Color yellow brown, except the following darker: Median and supraorbital carinae, funicles 2, 3, 5 and club; mid- and hindfemora, midtibia medially, apical ⅔ of hindtibia, last tarsal segment of all legs, abdomen; fore- and apical tip of mid- and hindcoxae white. Ratio head:thorax:abdomen:ovipositor 15:47:68:5, head alutaceous, postfrontal carina incomplete, occipital suture reaching the foramen, POL:OOL:interocular distance at vertex 9:4:18, eye height:malar distance 15:9, toruli removed 1 diameter from median carina; antennal ratio (Fig. 7) beginning with scape 12:6:7:10:9:5:6:5:18, scape width 0.4× length, funicles



Figs. 12–14. Forewings of *Acmopolynema* (black line equals 0.2 mm). 12, *A. bifasciatipenne*. 13, *A. immaculatum*. 14, *A. vittatipenne*.

becoming wider apically, club width 0.33× length, with 9 sensory ridges; ratio pronotum:scutum:scutellum:propodeum 10:14:14:9, pronotum alutaceous posterolaterally, with a pair of setae laterad of median carina at posterior margin, laterally with a row of 10 setae, spiracle enlarged, directed posteriorly; scutum and scutellum alutaceous, notauli a straight groove, scutellum with transverse row of fovea across posterior ⅓, few fovea at margin of scutellum and axillae, axillae each with a small seta; propodeum smooth, median keels forming a broad V, forming a tooth posteriorly, lateral carinae well developed, reaching spiracle, with a seta posterolaterally, spi-

racle placed in a small depression, ratio femur:tibia:tarsi 1:2:3:4 as follows: foreleg 29:27:15:6:5:7; midleg 22:39:20:9:6:7; hindleg 30:47:25:10:5:8; hindcoxa length:width 20:7, reticulate; forewing as in Fig. 17, length:width:LMC 115:32:20, modified discal setae of type A and C, with a few extending into anterior margin of distal stained area, hindwing length:width 90:3, abdomen elliptic, ovipositor exerted 0.1× abdomen length.

Male.—Unknown.

Types.—Holotype ♀, "13906 Cutler Road, Miami, Florida (Dade Co.), 8 January, 1979, L. Stange collector, pan trap"; deposited in the USNM, type no. 76795, donated by the Florida State Collection of Arthropods, Gainesville, Florida. Paratype ♀, same data as above, deposited in the FSCA.

Etymology.—The species epithet is derived from an arbitrary combination of letters.

Variation.—Observed differences in the specimens available for study were limited to minor variation in size, and the exact number and placement of wing setae.

Diagnosis and Discussion.—This species is distinct from other Nearctic species, being the only one in which the distal stained area of the forewing reaches the tip of the wing. In addition, the hindcoxae are reticulate, the scutum is equal in length to the scutellum, the propodeal keels form a broad V, and the LMC is equal to or slightly greater than one half the wing width.

Acmopolynema immaculatum Schauff, New Species
Figs. 6, 13

Holotype female.—Length 1.4 mm. Color dark brown; funicle segments, hindcoxa, and basal tip of mid- and hindtibiae lighter brown; pedicel, 1st 3 tarsi of all legs, and petiole yellow. Ratio head:thorax:abdomen:ovipositor 16:55:70:5, head lightly alutaceous, postfrontal carina incomplete, occipital suture reaching the foramen, POL:OOL:interocular distance at vertex 11:2:19, eye height:malar distance 15:10, toruli removed 1 diameter from median carina; antennal ratio (Fig. 6) beginning with scape 9:7:10:14:10:7:7:6:22; scape width 0.6× length, funicles becoming wider apically, club width 0.4× length, with 9 sensory ridges; ratio pronotum:scutum:scutellum:propodeum 10:15:20:10; pronotum alutaceous posterolaterally, with a pair of setae medially at posterior margin, laterally with row of 6 setae, spiracle enlarged, directed posteriorly; scutum and scutellum alutaceous, notauli a straight groove, scutellum with a transverse row of fovea medially, axillae without setae; propodeum smooth, median keels forming a distinct broad V, not forming a tooth posterior, lateral carina reduced to a short ridge above hindcoxa, with a seta laterad, spiracle flush with surface; ratio of femur:tibia:tarsi 1:2:3:4 as follows: Foreleg 40:30:15:6:5:7; midleg 25:40:19:8:7:6; hindleg 25:50:22:9:8:8; hindcoxa

length:width 20:7, smooth, and with many white setae anteriorly and ventrally; forewing as in Fig. 13, length:width:LMC 150:50:13, modified discal setae all of type F-H evenly scattered over wing; hindwing length:width 110:4; abdomen ovate elliptic, ovipositor exerted 0.1× abdomen length.

Allotype male.—Structurally as for female except for the following: Only the 1st 3 tarsi of the legs yellow, rest of body brown. Antennal ratio beginning with scape 7:5:13:13:13:13:13:14:14:14:14:13:13; scape width 0.9× length, broadened medially; funicles all of equal width. Propodeal keels form a distinct posteriorly directed tooth. Abdomen ovate.

Types.—Holotype ♀ deposited in the Canadian National Collection, type no. 16148, with data as follows: "Aldershot, N.S., Aug. 18, 1950, coll. A. Mcphee." Allotype with same data as above. Paratypes, 3 ♂, 1 ♂, Sask. Landing, Sask. 23-VI-56, O. Peck. 1 ♂, Wrightsville, Ont. 17-VII-1951, E.H.N. Smith, on Virginia creeper; 1 ♂, Lawrence, Tex. 57, Aug. 17/47, W.B. Specht." One paratype deposited in USNM.

Etymology.—The species epithet is derived from the Latin immacula, meaning unspotted or unstained, and refers to the wholly hyaline front wings.

Variation.—Differences in the specimen available for study were limited to slight variation in size; wing length:width:LMC 140-170:48-57:12-14.

Diagnosis and Discussion.—This species is the only one currently known from the Nearctic Region that lacks stained areas on the front wings. In addition, the discal cilia are not enlarged, LMC equals about one-fourth width of wing, the lateral carinae on the propodeum are reduced, and the median carina is a simple V-shape. *Acmopolynema brasiliense* (Ashmead), from South America, also has wholly hyaline front wings; however, it can be distinguished from *immaculatum* by the following characters: Scape and forelegs yellow (brown in *immaculatum*); ovipositor exerted half the length of abdomen (barely reaching past the tip in *immaculatum*); discal setae of forewing thickened and blunt (narrow and pointed in *immaculatum*.

Acmopolynema vittatipenne (Dozier), New Combination
Figs. 9, 14

Polynema vittatipennis Dozier, 1932: 83.

Although Dozier's original description was quite detailed, I would add the following from the paratype: Female length 1.2 mm; color light brown; ratio head:thorax:abdomen:ovipositor 9:36:40:45, POL:OOL 7:4, occipital suture nearly reaching foramen, antennal ratio (Fig. 9) beginning with scape 9:6:7:11:10:8:6:6:16, club width 0.45× length, with 9 sensory ridges, ratio pronotum:scutum:scutellum:propodeum 5:12:12:7, spiracle directed posteriorly, scutum and scutellum alutaceous, notauli a thin groove, constricted anteriorly, propodeum smooth, median keels a narrow V with transverse anterior extensions running parallel to the metanotum, ending in a tooth,

lateral carinae nearly reaching spiracle; ratio femur:tibia:tarsi 1:2:3:4 as follows: foreleg 27:25:17:7:5:6; midleg 20:40:24:9:8:8; hindleg 25:45:29:9:7:8; hindcoxa length:width 17:6, alutaceous; forewing as in Fig. 14, LMC = 15, modified discal setae of types A and B (Fig. 4), a few reaching distal stained area; abdomen elliptic, ovipositor exerted 1.1× length.

Male.—Unknown.

Types.—Paratype ♀ on slide labeled as follows: "*Polynema vittatipennis* Dozier. Reared from sweet potato infested with *Copicerus irroratus* etc. Port-au-Prince, Haiti. Dec. 30, 1929, H.L. Dozier." Deposited in USNM, type no. 43877.

Other specimens examined.—Female on slide with data: "Florida, Dade Co. Homestead Exp. Sta. 6-XI-1973, W.H. Pierce, Malaise Trap."

Variation.—Differences in the two specimens available for study were limited to minor variation in size and color.

Diagnosis and Discussion.—This species can be recognized by the following combination of characters: Overall dark brown in color; ovipositor exerted the length of the abdomen; pronotum shorter than scutum; scutum and scutellum equal in length; hindtarsus longer than hindtibia; forewing with only two stained areas (no stain under venation); LMC greater than half the width of the wing. This species was described from two females reared by Dozier. He states that they probably emerged from the eggs of a small cricket; however, this host record must remain in doubt since leafhoppers and delphacids were also present on the plant. Although the Dozier collection is now in the USNM, I have been unable to locate the holotype; therefore, the data given are based on the paratype.

Acmopolynema bifasciatipenne (Girault)
Figs. 8, 12

Stichothrix bifasciatipennis Girault, 1908: 9.
Polynema bifasciatipenne Girault, 1910: 254 (n. comb).
Acmopolynema bifasciatipenne (Girault): Oglobin, 1946: 286 (n. comb.).
Acmopolynema bifasciatipenne var. *varium* (Girault): Burks, 1979: 1031 (incorrect synonymy).

To aid in the recognition of this species, I would add the following to that given by Girault: Female length 2.0 mm, color brown, ratio head: thorax:abdomen:ovipositor 20:65:105:10; POL:OOL 11:5, occipital suture short, reaching just past lateral ocellus, antennal ratio (Fig. 8) beginning with scape 11:8:11:16:15:10:11:8:23, scape width 0.6× length, club width 0.3× length, with 9 sensory ridges; ratio pronotum:scutum:scutellum: propodeum 16:24:15:10, spiracle directed posteriorly, scutum and scutellum alutaceous, notauli a narrow line, propodeum smooth, median keels forming a short V, ending with a tooth, lateral carinae nearly reaching spiracle; ratio femur:tibia:tarsi 1:2:3:4 as follows: foreleg 35:32:22:10:8:10; midleg

27:45:36:10:8:9; hindleg 35:65:40:10:9:9; hindcoxa length:width 25:7, alutaceous; forewing as in Fig. 12, length:width:LMC 170:41:20, modified discal setae of types B and D, some reaching distal stained area, hindwing length:width 120:2, abdomen elongate elliptic, ovipositor exerted 0.1× length.

Male.—Unknown.

Types.—LECTOTYPE ♀, by present designation, on slide, USNM type no. 11846, deposited in USNM, with data: "*Stichothrix bifasciatipennis* Girault, from eggs of *Anaxipha exigua,* D.C. May 29, 1905." Paralectotype ♀ on slide, same data as above except collected May 6, 1905. Deposited in the Illinois Natural History Survey, Urbana.

Other specimens examined.—One ♀ with data: "Williamsville, Mo. 15-viii–10-ix-69. J. T. Becker, Malaise Trap." Known from Washington, D.C. and Missouri.

Variation.—The paralectotype female is considerably lighter in color than the lectotype; however, this is probably due to clearing during the mounting of the specimen. The occipital suture of the lectotype is obscured, but in the other specimens, it reaches the foramen. Other differences were limited to minor variations in size, numbers of setae on the forewings, and position of the stained areas.

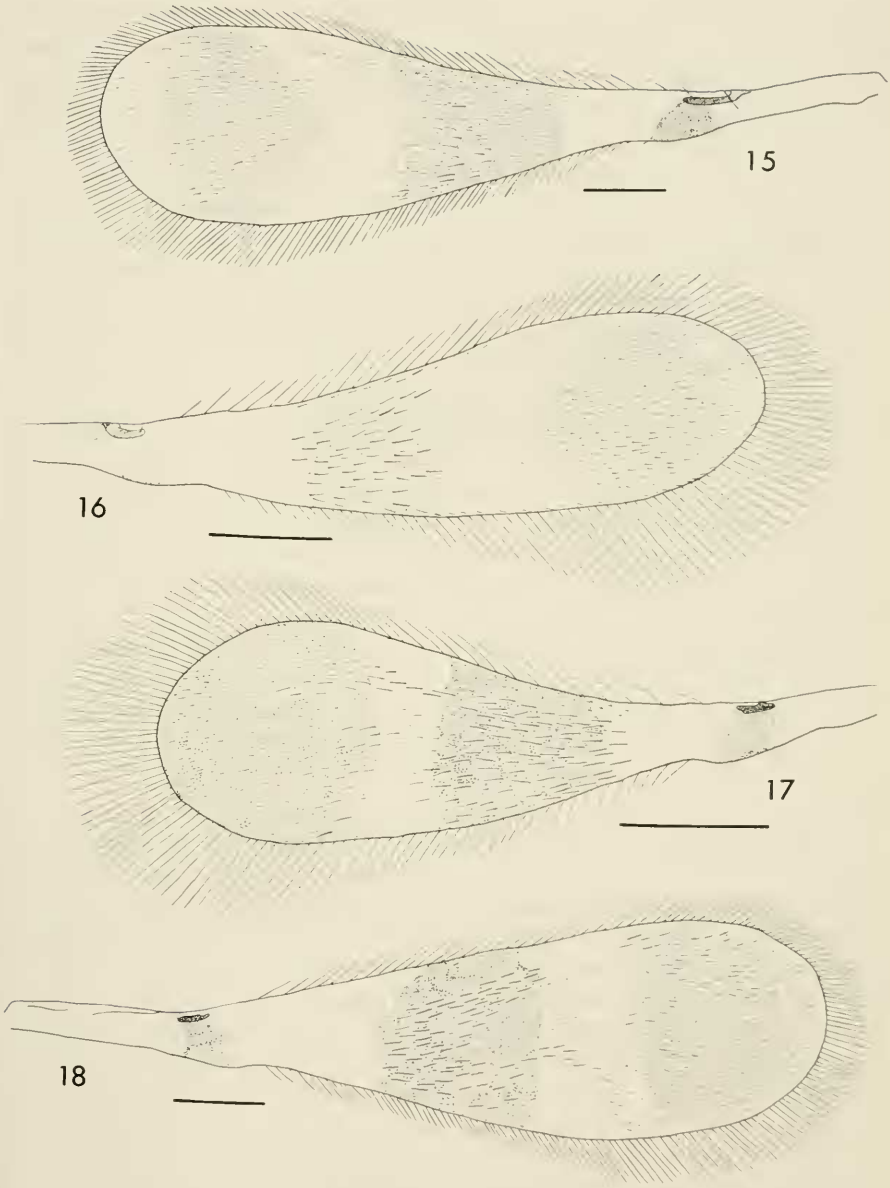
Diagnosis and Discussion.—This species can be identified by the following combination of characters: Pronotum slightly shorter than scutum; propodeal keels a short V; forewing with LMC equal to at least one half wing width; modified discal setae reaching apical stained area; hindtarsus longer than tibia; and ovipositor slightly extruded.

Although Girault's original description of this species was adequate, he later redescribed it (Girault, 1910) in great detail after having examined several additional specimens in the USNM. However, after examining those specimens, I have found that the redescription was based entirely on specimens of *A. varium* which Girault considered to be conspecific (see discussion of *A. varium*). Later, Burks (1979) incorrectly placed *varium* into synonymy with *bifasciatipenne*. In addition, Girault did not designate either of the original two females of *bifasciatipenne* as the holotype. Therefore, I have designated the USNM specimen (type no. 11846) as lectotype.

Acmopolynema varium (Girault) NEW STATUS
Figs. 11, 18

Polynema bifasciatipenne var. *varium* Girault, 1917: 92.
Acmopolynema bifasciatipenne (Girault); Oglobin, 1946: 286 (n. comb).

The following characters are added to aid in the recognition of this species: Female length 2.0 mm.; ratio head:thorax:abdomen:ovipositor 27:95:105:40; overall color yellow; POL:OOL 10:6; occipital suture indistinct, reaching just past lateral ocellus, antennal ratio (Fig. 11) beginning with scape



Figs. 15–18. Forewings of *Acmopolynema* (black line equals 0.2 mm). 15, *A. miamiense*. 16, *A. sema*. 17, *A. uma*. 18, *A. varium*.

15:8:16:20:20:15:11:10:32, scape width 0.5× length, club width 0.3× length, funicles 5 and 6 each with a pair of sensory ridges, club with 9 sensory ridges; ratio pronotum:scutum:scutellum:propodeum 20:30:25:20; spiracle directed posteriorly, scutum and scutellum alutaceous, notauli a broad groove, not constricted anteriorly, propodeum smooth, median keels form a broad V, with a transverse carina between the anterior margin at the V, ending in a tooth, lateral carinae nearly reaching spiracle, a depression between median keels and spiracle; ratio femur:tibia:tarsi 1:2:3:4 as follows: foreleg 52:55:45:15:10:12; midleg 35:68:45:15:10:12; hindleg 55:90:65:17:11:11; hindcoxa length:width 32:11, alutaceous; forewing as in Fig. 18, length:width:LMC 200:54:14, modified discal setae of type E, restricted to basal large stained area, hindwing length:width 156:5; abdomen elongate elliptic, ovipositor extruded 0.4× abdomen length.

Male as for female except for following: Antennal ratio 12:7:19:23: 22:21:20:20:18:18:17:17:18; abdomen length about 0.6 mm.

Types.—LECTOTYPE ♀, by present designation, on point (wing and antenna on slide), USNM paratype no. 20599, with data as follows: "no. 860.E, reared from eggs of *Oe. niveus* in resin weed, June 3, 1881." Two ♀ paralectotypes on points, USNM type no. 20599, with data as above, except collected on June 7 and June 10, 1881.

Other specimens examined.—This is the most commonly collected of the species studied. Specimens (50 ♀, 14 ♂) have been collected throughout North America in the following states and provinces: Maryland, Delaware, New Jersey, Virginia, District of Columbia, Massachusetts, Maine, Michigan, Tennessee, Iowa, Kansas, Oklahoma, Texas, California, Ontario, and Quebec.

Variation.—The vast majority of specimens studied have the body almost entirely yellow or yellow brown, with the apical funicle segments, club, median carina, supraorbital carina, area around the ocelli, and last tarsal segment darker. The funicle segments may be light brown or amber colored, the areas around the notauli darker than the rest of the thorax, and the hindtibia and posterior abdomen may be dark brown. A specimen from Texas has the antennae wholly light brown, two females from California have the body almost entirely dark brown except for portions of the antennae, petiole, and legs. Measurements varied as follows: Length 2.0–2.2 mm excluding ovipositor; antennal ratios may vary + or − one unit from the type, slightly more for the club (28-32); forewing length:width:LMC 195–240:55–70:12–16. The large stained areas of the wing may vary slightly in size, as can the number of modified discal setae. The median propodeal keels are usually similar to those of the lectotype. However, the transverse carinae at the anterior margin of the V may be missing or fragmented, and in a few specimens, the carinae which form the V are fragmented.

Diagnosis and Discussion.—This species can generallybe recognized by

its yellow color. However, the following combination of characters should be checked: Funicles 2 and 3 about 10× as long as wide; funicles 5 and 6 each with a pair of sensory ridges; scutum longer than scutellum; LMC less than half width of wing; and ovipositor extruded about half the length of the abdomen.

In 1908, Girault described *Stichothrix bifasciatipennis* from two females. Then Girault (1910) moved the species to the genus *Polynema*, and redescribed it based on his examination of a number of specimens in the USNM. Seven years later Girault (1917) described *Polynema bifasciatipenne* var. *varium* from three females and one male and differentiated it on the basis of "differing from the typical form in being light yellowish brown" and with the "ovipositor . . . more extruded." Oglobin (1946) then used *bifasciatipenne* as the type of his new genus *Acmopolynema*. Finally, Burks (1979) synonymized the two forms (*bifasciatipenne* and *bifasciatipenne* var. *varium*) under the name *Acmopolynema bifasciatipenne*. My study has revealed that specimens originally described as var. *varium* by Girault and many other specimens in the USNM collection that were identified as *varium* constitute a valid species different from *bifasciatipenne*. The two species can be differentiated by 1) the presence of sensory ridges on funicles 5 and 6 in *varium*, 2) LMC greater than half the wing width in *varium*, less than half in *bifasciatipenne*, and 3) ovipositor exerted at least half length of abdomen in *varium*, exerted just past tip of abdomen in *bifasciatipenne*. Since no holotype was designated by Girault, I have designated a lectotype.

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